7. DECOMMISSIONING AND DECONTAMINATION

7.1 INTRODUCTION

The objectives of the decommissioning are to manage the risks posed by the facility and to minimize the amount of waste generation and the creation of wastes that require special treatment, The Los Alamos National Laboratory has a number of features that will facilitate the decommissioning and decontamination (D&D) of the LANSCE complex. The Laboratory has extensive experience in handling, transporting and disposal of wastes, including highly radioactive wastes. Information on the scope to the D&D can be determined from the following available information: the description of the facility, the history of the operations for estimating radionuclides, isotope inventories of the most radioactive components, and current radiation surveys. Finally the long-term storage of radioactive components can be done within the confines and control of the Laboratory. The D&D will be completed in two stages. The first stage will prepare the facility for acceptance to the Laboratory's environmental restoration. The final stage will be the environmental restoration.

Operations will be administered, audited, and controlled in compliance with regulations, directives, and orders of the Department of Energy (DOE); the Environmental Protection Agency (EPA); the Occupational Safety and Health Administration (OSHA); the Department of Transportation: the New Mexico Environment Department (NMED); and the New Mexico Board of Pharmacy. The waste management will ensure that radioactive, chemical, liquid and solid wastes are appropriately stored, processed and disposed of in compliance with federal and state regulations.

7.2 D&D SUPPORT

The Laboratory will use a number of organizations to complete the D &D of the facility. The AOT-division operations personnel will supply the corporate knowledge of the facility, is functionality, it capabilities, and its history. This division also has extensive experience in handling highly activated material. The Environment, Safety, and Health (ESH) division has extensive records of the local hazards and during D&D will monitor the hazards and ensure that people and the environment are protected. Facilities, Security and Safeguards (FSS) division will provide knowledge of the buildings and structures and will ensure their proper condition. Chemical, Science , and Technology (CST) and Business Operations (BUS) divisions and the Environment Management (EM) project office will provide the waste management, transportation, and final disposal.

7.3 PREPARATION FOR ENVIRONMENTAL RESTORATION

Before the environmental restoration can begin, the decomissioning of the facility must be completed and documented. The programmatic facility operation will be terminated; the fact, that no further use of the facility is planned for the program, will be documented. Possible alternative uses of the facility will be also be documented. With the assistance of ESH division, a radiological and hazardous material survey will be made. Surveillance and routine maintenance plans will be provided to keep the facility in safe operation condition and prevent or detect conditions that could lead to release of hazardous substances, These plans will address such items as ventilation systems, continued electrical power and other utilities, barriers and access control, physical inspections and continued radiological measurements.

The facility structures will be placed in safe, secure condition. Operations personnel are well prepared to shut down the facility and place it in a safe configuration. They have gained much experience during the numerous scheduled maintenance periods, when the accelerator was placed in a stand-down mode. To facilitate the D&D of the facility, FSS division maintains as-built drawings of the structures. New equipment, such as targets which will be made highly radioactive, are being designed for ease of removal. Their water and other connections have been or will be designed to be accessible outside the high radiation fields.

Known personnel and environmental hazards will be either documented or removed. The AOT facility management group keeps a record of all Solid Waste Management Units (SWMUs) on site, and ESH division keeps a Laboratory-wide compilation of SWMUs. ESH division personnel maintain a list of all TA-53 facility radiological areas with their posting levels. When possible, on-site personnel will remove the most highly radioactive materials from the site. LANSCE personnel have extensive experience on handling highly activated beams stops and targets and have developed remote handling and shipping expertise. Targets A1, A2 and A-6 (the H+ beam stop) and the LNSC target have all been removed at one time. These targets had dose rates up to 80,000 R/hr. Such removals have involved AOT personnel who use remote handling to access and place the activated material in shielded casks; CST personnel who has produced guidelines for radioactive handling, approves removal procedures, and completes the final disposal; ESH personnel who verifies the analysis of the wastes; and BUS personnel who transports (in accordance to DOE, EPA and DOT regulations) the wastes to the laboratory disposal site.

Radiation monitoring will be continued at a level adequate to contain and monitor potential release. To prevent unauthorized access, appropriate fencing, locking surveillance activities will be implemented. Structures and systems will be kept structurally

sound until released to EM. The required maintenance will continue to ensure that equipment does not fail and release any contaminants.

Facility resources will be redistributed. Personnel issues such as reassignment, retraining and reduction-in-force will be resolved. Arrangements will be made for cost effective utilization of reusable resources (e.g. magnets, spectrometers detectors) at other Laboratory locations or at other institutions.

7.4 ENVIRONMENTAL RESTORATION

The EM division will complete the final D&D of the facility under their environmental restoration program. This program will make the final disposition of the facility's structures, their contents and the facility site. This disposition will be based on information from the former occupants and on regulations of relevant federal and state requirements. Reference EM/ER 1994[1] gives past Laboratory D&D activities and D&D procedures. EM project office will also produce a final report giving the details of the D&D, the lessons learned and the final condition of the site and facility.

7.5 LABORATORY POLICIES.

All procedures will follow the Laboratory Director's policies relating to environment, safety and health. Policies relevant to D&D are as follows. Operation shall be performed in a manner that protect the environment and in compliance with applicable federal, state, and local environmental protection regulations. Laboratory-generated gaseous, liquid and solid wastes shall be effectively managed and controlled to minimize release of radioactive and hazardous material to the environment. The laboratory will define and establish the responsibilities and methodologies for packaging and transporting of hazardous and radioactive materials on and off site. The Laboratory activities that may involve radiation shall be planned and conducted in a manner to protect employees, subcontractors, the public, and the environment from the harmful effects of radiation.
These policies and their implementation are contained in the Laboratory Manual in the form of administrative requirements (ARs), Laboratory Policies (LS) and Laboratory Standards (LS). Topics that are addressed in the manual include special work permits, excavation or fill permit review, radiation protection program, radiation protection exposure standards, radioactive source control, shipment of radioactive materials, radiation exposure control, radiological posting, documenting equipment and item removal, handling of hazardous materials, environment protection, waste management.

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[1] EM/ER 1994, "D&D Site Summary Plan" Los Alamos National Laboratory document.